## REMARKS

### Claim Amendments

The claims have been amended to ensure consistency and to properly conform with US practice. Further, claims 134, 135, 141 and 163-167 have been canceled by the present amendment. Entry and consideration of the claim amendments is respectfully requested.

### Restriction

Applicants elect for further examination the claims of **Group I**, i.e., claims 96-132 and 168, drawn to an electrical reactor for reforming a gas. Applicants make the election with traverse.

The Official Action asserts that Groups I, II and III do not share a special technical feature which makes a contribution over the art. Applicants traverse this assertion.

The special technical feature shared by the claims relates to a porous conductive filling material which defines as a whole or in part a reforming catalyst, the conductive filling material being electrically insulated from a metal wall of the enclosure so as to prevent any short-circuit. Please note that claim 171 has been amended to recite a filling material consisting of unitary elements, based on intermetallic compounds and/or their oxides, and wherein said unitary elements are adapted, when the filling material is disposed in a reaction chamber, to be subject to an electrical current, wherein the filling material is adapted to be electrically insulated from a metal wall of an enclosure of a reaction chamber so as to prevent any short-circuit. Thus, the groups of claims share a special technical feature.

Further, applicants assert that this shared special technical feature makes a contribution over the art. The art relied upon by the Official Action is Kraus et al, *Phys. Chem. Chem. Phys*. 2001, 3, 294-300. Kraus discloses a method of using cold plasma, which does not operate in thermal equilibrium conditions. The Kraus method requires an electrical field to provide gas ionization. This method is mentioned in the prior art section of the specification of the present application (See paragraph [0046] of the specification as published). This technology may be implemented using corona discharges, electrical pulses or microwave plasma. This technology requires use of a dielectric barrier, so that the current is blocked.

Ionization is produced by high electrical field generated by electrical pulses. Electrical pulses are provided by a high voltage pulser which generates pulses with a voltage of 30 kV and a pulse half width of approximately 2 µs.

In contrast, in the presently claimed invention, gas ionization is produced by an electron flux which is generated inside the conductive filling material. Electrons are provided directly by the feed current which flows through the filling material. Electron circulation is provided by low voltage (2.80-3.11 V in example 1, 2.44-2.75 V in example 2) and direct current.

It thus appears that the feature of "a porous conductive filling material which defines as a whole or in part a reforming catalyst, the conductive filling material being electrically insulated from a metal wall of the enclosure so as to prevent any short-circuit" is a special technical feature which defines a contribution over prior art.

Accordingly, the inventions of Groups I, II and III relate to a single general inventive concept under PCT Rule 13.1 and must be examined together.

**Species Election**

Additionally, the outstanding Official Action requires an election of species with the election of Group I.

First, the Official Action requires the election of:

Species A1 - an electrical reactor comprising ..., the reactor including: ... one electrical source as cited in page 30.

Species A2 - an electrical reactor comprising ..., the reactor including: ... one electrical source, said lining defining an iron or iron alloy based on catalyst as cited in the third paragraph of page 32.

This species election is not understood, as claim 96 relates to a reactor that comprises both an electrical source and a conductive filling material. Accordingly, applicants elect **Species A1** with traverse. Species A1 and A2 should be simultaneously searched.

Further, with the election of Species A1, the Office has requested that applicants elect a species from "C1, C2, or C3" and from "D1 or D2." Accordingly, applicants elect **Species C2 and D1**.

Of the Group I claims (96-132) at least claims 96-98, 107-122 and 132 are generic to all the species. And, at least claims 96-98, 103, 104, 107-126 and 132 read on the elected species.

Applicants believe that the foregoing is fully responsive to the outstanding Official Action including the restriction and the election of species requirement. If, however, the Examiner believes that any further information or election is required, the Examiner is encouraged to contact applicants' attorney at the number provided below. Such informal communication will expedite examination and disposition of the case.

**Conclusion**

For at least the reasons stated above, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections and objections, and to allow the present application.

In the event that there are any questions concerning this amendment, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,
BUCHANAN INGERSOLL & ROONEY PC

Date: 3 December 2008 By: 
Travis D. Boone
Registration No. 52635

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620